

CLAIMS

The invention is claimed as follows:

1. A lamp for detecting fluorescent dyes that have been added to an air conditioning or refrigeration system, wherein the fluorescent dyes reemit light at a wavelength greater than the wavelength of light emitted from the lamp, the lamp comprising:
 - a lamp housing flexibly connected to a power source;
 - at least one light-emitting diode within the lamp housing, the diode emitting light having a wavelength band effective to enhance the reemission of light from the fluorescent dyes, and
 - wherein said miniaturized lamp is sized to facilitate maneuvering inside an engine compartment and around an air-conditioning system or refrigeration system.
2. The lamp of claim 1, wherein the diode is a blue light-emitting diode.
3. The lamp of claim 1, wherein the diode is a UV light-emitting diode.
4. The lamp of claim 2, wherein the blue light-emitting diode is an indium gallium nitride semiconductor.
5. The lamp of claim 2, wherein the blue light-emitting diode is a laser diode.
6. The lamp of claim 5, wherein the laser diode is a gallium nitride based laser diode.
7. The lamp of claim 1, further comprising a protector ring connected to the lamp housing.
8. The lamp of claim 7, further comprising a lens positioned within the protector ring.

9. The lamp of claim 8, wherein the lens is a filter selected from the group consisting of black, red, amber, yellow, green, blue, indigo, violet, UV light and full spectrum filters.

10. The lamp of claim 9, further comprising a blocker glass.

5 11. The lamp of claim 9, wherein the lens is a dichroic filter.

12. The lamp of claim 1, further comprising a plurality of light-emitting diodes.

13. The lamp of claim 12, wherein each of the light-emitting diodes emits the same color light.

10 14. A method for detecting leaks in an air-conditioning or refrigeration system, comprising the steps of:

inserting a fluorescent dye into an air-conditioning or refrigeration system;

running the air-conditioning or refrigeration system; and

inspecting the air-conditioning or refrigeration system with the lamp of claim.